UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,505	06/14/2001	Bipul Binit Sinha	oracle01.016	7778

25247   7590   01/17/2006

GORDON E NELSON
PATENT ATTORNEY, PC
57 CENTRAL ST
PO BOX 782
ROWLEY, MA 01969

EXAMINER
LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _31 October 2005_ .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _2-31_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _2-31_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _14 June 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

Claims Status

Claims 2-31 are pending. Claim 1 has been cancelled. Claims 2-31 are rejected as detailed

below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the

rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2 – 31 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,335,343 issued

to Lampson et al (hereafter Lampson).

Claims 10, 11, 22 and 26:

Lampson discloses:

receiving an augmented one of the messages from the other component, the other component

having augmented the message by adding protocol state information to the message, the protocol state

information indicating a state of the other component that is relevant to the protocol [Fig 12, step 81, col

9, lines 58-65, subordinate sends a read vote]:

retaining the state of the other component indicated in the augmented message [col 10, lines 14-

25, coordinator counts yes-votes and no-votes implies retaining];

using the retained state to optimize the protocol [Fig 13, col 10, lines 7-25, no second phase of

the two phase protocol for read-only, no commit or abort message, col 10, lines 1-5].

Claims 2, 6, 23 and 27:

Lampson discloses the protocol ensures that the results of the transaction are consistent in the components and in the step of receiving an augmented one of the messages, the protocol state information indicates whether the transaction will modify data in the other component [Fig 12, col 9, lines 58-68]

Claims 3, 7, 24 and 28 :

Lampson discloses the protocol being optimized by the first component is a two-phase commit protocol, and the other component receives an abort message of the two-phase commit protocol when the protocol state indicates that the transaction will not modify the data of the other component [Fig 6, step 33]

Claims 4, 8, 25 and 29:

Lampson discloses the distributed system is a distributed database system and the coordinator and the other component are database systems therein [Figs 1 and 2, col 4, lines 40-55]

Claim 5:

Lampson discloses:

determining the protocol state

augmenting a message of the transaction by adding protocol state information to the message, the protocol state information indicating the protocol state of the component [Fig 12, step 81, col 9, lines 58-65, subordinate sends a read vote]

the first component using the protocol state to optimize the protocol [Fig 13, col 10, lines 7-25, no second phase of the two-phase protocol for read-only, no commit or abort message, col 10, lines 1-5]

Claim 9:

Lampson discloses:

receiving a message of the transaction from the cohort, the message being augmented with state

information indicating whether the transaction modifies the cohort's data [Fig 12, step 81, col 9, lines

58-65, subordinate sends a vote]

retaining the state information for the cohort [col 10, lines 14-25, coordinator counts yes votes

and no votes]

if the state information for the cohort indicates that the transaction does not modify the cohort's

data, sending an abort message of the two-phase commit protocol to the cohort [col 4, lines 35-55]

Claim 12:

Lampson discloses the data storage device contains code which, when executed by a processor

performs the method of claim 11 [Fig 2, 16]

Claim 13:

Lampson discloses the data storage device contains code which, when executed by a processor,

performs the method of claim 2 [Fig 2, 16]

Claim 14:

Lampson discloses the data storage device contains code which, when executed by a processor,

performs the method of claim 3 [Fig 2, 16]

Claim 15:

Lampson discloses the data storage device contains code which, when executed by a processor,

performs the method of claim 4 [Fig 2,16]

Claim 16:

Lampson discloses the data storage device contains code which, when executed by a processor,

performs the method of claim 5 [Fig 2,16]

Claim 17:

Lampson discloses the data storage device contains code which, when executed by a processor, performs the method of claim 6 [Fig 2,16].

Claim 18:

Lampson discloses the data storage device contains code which, when executed by a processor, performs the method of claim 7 [Fig 2, 16].

Claim 19:

Lampson discloses the data storage device contains code which, when executed by a processor, performs the method of claim 8 [Fig 2, 16].

Claim 20:

Lampson discloses the data storage device contains code which, when executed by a processor, performs the method of claim 9 [Fig 2, 16].

Claim 21:

Lampson discloses the data storage device contains code which, when executed by a processor, performs the method of claim 10 [Fig 2, 16].

Claim 30:

Lampson discloses:

retained state information that retains state of a cohort, the state indicating whether the transaction will modify the cohort's data, the coordinator receiving a message of the transaction from the cohort which has been augmented with the state information [Fig 12, step 81, col 9, lines 58-65], retaining the state information from the augmented message in the retained state information [col 10, lines 14-25], and if the retained state information for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message of the two-phase protocol to the cohort [col 4, lines 35-55]

Claim 31:

Lampson discloses:

a message of the transaction that is augmented with state information indicating whether the transaction

will modify the cohort's data, the cohort sending the message to the coordinator and the coordinator

retaining the state information [Fig 12, step 81, col 10, lines 14-25] and if the retained state information

for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message

of the two-phase commit protocol to the cohort [col 4, lines 35-55]

Response to Arguments

Applicant's arguments filed 5/18/2005 with respect to claims 2-31 have been carefully

considered but are not persuasive for the reasons given below.

Applicant Argues:

Applicant states in the paragraph joining pages 14 and 15 :

Moreover, since there are no augmented messages in Lampson, there is also nothing equivalent to claim

11's limitation of "retaining the state of the other component indicated in the augmented message and

using the retained state to optimize the protocol."

Examiner Responds:

Examiner is not persuaded. Considering applicant's assertion that Lampson does not disclose

"augmented messages" examiner maintains Lampson discloses multiple instances of messages which

include the status of remote devices or registers. Typical status indicators are read-only indicators

[Lampson col 9, line 50 through col 10, line 25]. It is inherent in the disclosure of Lampson that a

message must be augmented to include status information. In support of examiner's position that

augmenting the message to include status information is inherent in the teachings of Lampson, applicant

is referred to the disclosure of Adams et al, i.e., US Pat No 4,866,714, in particular column 28, lines 3-

35] which teaches that STAT1 and STAT2 status signals are added to a reply message.

Considering applicant's assertion that Lampson does not disclose "retaining the state of the other

component indicated in the augmented message," examiner maintains the following disclosure by

Lampson reads on above claim limitation:

Column 9, line 57 through column 10, line 6:

> Referring to FIG. 12, to take into account "read-only" transactions in a two-phase commit protocol, when a subordinate receives a prepare message (item 29), it first determines at item 80, by examining its log, whether or not it has done any updates to the database (i.e., whether "undo" or "redo" log records have been written). If not, then at item 81 it sends a "read" vote to the coordinator, releases its locks, and forgets the transaction, item 82. In this case, the subordinate writes no log records; it merely returns to idle state. As far as this subordinate process 26 is concerned, it does not matter whether the transaction ultimately gets aborted or committed. So this subordinate, who is now known to the coordinator as "read-only" does not need to be sent a "commit" or "abort" message by the coordinator. In the Table of FIG. 10, columns are shown for "read-only" and "update" transactions.

Lampson clearly discloses that the coordinator knows that a particular subordinate is read-only

and thus Lampson reads on the above claim limitation "retaining the state of the other component

indicated in the augmented message."

Considering applicant's assertion that Lampson does not disclose "using the retained state to optimize

the protocol" examiner maintains above limitation is a recitation of the intended use of "the state of the other

component." For patentability "using the retained state to optimize the protocol" must result in a structural

difference or difference in method steps between the claimed invention and the prior art in order to patentably

distinguish the claimed invention from the prior art. If the prior art structure (data structure) is capable of

performing the intended use, then it meets the claim. Lampson clearly discloses messages which determine the

status of subordinates and therefore, the above claim limitation does not patentably distinguish the present

invention from the cited prior art.

However, for the sake or arguing, consider the claim limitation "using the retained state to optimize the

protocol." The following disclosure by Lampson is relevant:

Column 10, lines 7-25:

> Referring to FIG. 13, there will be no second phase of the two-phase protocol if a coordinator process is read-only and gets only "read" votes. At item 83, the coordinator process determines that it is read-only itself, then at item 84 it finds that all subordinates sent read-votes. In this case the coordinator, just like the subordinates, writes no log records for the transaction.

On the other hand, if the coordinator or one of the subordinates votes yes and none of the others vote no, then the coordinator behaves as in the standard two-phase commit protocol. But note that it is sufficient for the coordinator to include in the commit record 54 only the identities of those subordinates (if any) that voted yes (only those processes will be in the prepared state and hence only they will be sent commit messages, item). If the coordinator or one of the subordinates votes no then the coordinator behaves as described earlier, FIG. 5.

Lampson clearly teaches per the above that the coordinator does not perform a scond phase of the two-phase commit protocol and thus the two-phase commit protocol is simplified. Lampson discloses per the above that the retained state (read-only) of the other component is used by the coordinator to optimize the two-phase commit protocol.

Applicant Argues:

Applicant states in the second paragraph of page 15:

In his rejection of claims 5, 10, 11 and 22, examiner finds the step of receiving an augmented one of the messages in the receipt of a read vote from the cohort by Lampson's coordinator. The problem with this reading is that the "read vote" is a message of the protocol, not the augmented message [belonging to a transaction] of applicant's claim. As for 'retaining the state of the other component indicated in the augmented message,' examiner reasons that because Lampson's coordinator counts yes votes and no votes from the cohorts, it must retain the read votes. The problem is that the read vote is not an 'augmented message' and thus retaining the 'read vote' is not 'retaining the state of the other component indicated in the augmented message as required by the limitation.

Examiner Responds:

Examiner is not persuaded. Applicant discloses the following in the first paragraph of page 18 of the specification:

The mechanism's components are the following:

- cohort status information which is added to each message which the cohort returns to the coordinator

- current cohort status which has been added to the object for each outgoing link

They are shown in FIG. 4. Cohort messages 403 from the cohort to the coordinator now have an extra 32-bit word which contains cohort status information 405. One bit of that information, shown at 407, indicates whether the cohort is read-only at the time the message is sent with regard to the transaction that the message belongs to. Whenever the cohort sends a message to the coordinator, it sets bit 407 as required for the transaction the message belongs to. As each message arrives in the coordinator, the coordinator reads bit 407.

Examiner maintains the following disclosure by Lampson is clearly the same as above disclosure by applicant:

Column 10, lines 7-25:

> Referring to FIG. 13, there will be no second phase of the two-phase protocol if a coordinator process is read-only and gets only "read" votes. At item 83, the coordinator process determines that it is read-only itself, then at item 84 it finds that all subordinates sent read-votes. In this case the coordinator, just like the subordinates, writes no log records for the transaction. On the other hand, if the coordinator or one of the subordinates votes yes and none of the others vote no, then the coordinator behaves as in the standard two-phase commit protocol. But note that it is sufficient for the coordinator to include in the commit record 54 only the identities of those subordinates (if any) that voted yes (only those processes will be in the prepared state and hence only they will be sent commit messages, item). If the coordinator or one of the subordinates votes no then the coordinator behaves as described earlier, FIG. 5.

Furthermore, examiner maintains Lampson discloses multiple instances of messages which include the status of remote devices or registers. Typical status indicators are read-only indicators [Lampson col 9, line 50 through col 10, line 25]. It is inherent in the disclosure of Lampson that a message must be augmented to include status information. In support of examiner's position that augmenting the message to include status information is inherent in the teachings of Lampson, applicant is referred to the disclosure of Adams et al, i.e., US Pat No 4,866,714, in particular column 28, lines 3-35] which teaches that STAT1 and STAT2 status signals are added to a reply message.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P. LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached Monday through Friday, 8:00 am - 4:30 pm.
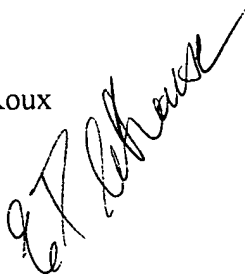
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

Etienne LeRoux

1/10/2005